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Amendments to Claims

Claims 1-22 (canceled)

Claim 23 (Currently Amended) A method for the production of isoprenoid compounds comprising: contacting a transformed host cell under suitable growth conditions with an effective amount of a carbon source whereby an isoprenoid compound is produced, said transformed host cell comprising of the a nucleic acid molecules encoding SEQ ID NOs: 4, under the control of suitable regulatory sequences, and wherein said isoprenoid compound is selected from the group consisting of β-carotene and astaxanthin.

Claim 24 (Original). A method according to Claim 23 wherein the transformed host cell is selected from the group consisting of *Aspergillus*, *Trichoderma*, *Saccharomyces*, *Pichia*, *Candida*, *Hansenula*, *Salmonella*, *Bacillus*, *Acinetobacter*, *Rhodococcus*, *Streptomyces*, *Escherichia*, *Pseudomonas*, *Methylomonas*, *Methylobacter*, *Alcaligenes*, *Synechocystis*, *Anabaena*, *Thiobacillus*, *Methanobacterium* and *Klebsiella*.

Claim 25 (Previously Presented). A method according to Claim 36 wherein said methanotrophic bacteria:

- (a) grows on a C1 carbon substrate selected from the group consisting of methane and methanol; and
- (b) comprises a functional Embden-Meyerof carbon pathway, said pathway comprising a gene encoding a pyrophosphate dependent phosphofructokinase enzyme.

Claim 26 (Original). A method according to Claim 25 wherein said methanotrophic bacteria is *methylomonas* 16a ATCC PTA 2402.

Claim 27 (Currently Amended). A method according to Claim 23 wherein the transformed host cell is selected from from the group consisting of soybean, rapeseed, sunflower, cotton, corn, tobacco, alfalfa, wheat, barley, oats, sorghum, rice, *Arabidopsis*, cruciferous vegetables, melons, carrots, celery, parsley, tomatoes, potatoes, strawberries, peanuts, grapes, grass seed crops, sugar beets, sugar cane, beans, peas, rye, flax, hardwood trees, softwood trees, and forage grasses.

Claim 28 (Original). A method according to Claim 23 wherein the carbon source is selected from the group consisting of monosaccharides, oligosaccharides, polysaccharides, carbon dioxide, methanol, methane, formaldehyde, formate, and carbon-containing amines.

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Claim 29 (Original). A method according to Claim 23 wherein the transformed host is selected from the group consisting of *Methylomonas*, *Methylobacter* and *Methanobacterium* and the carbon source is selected from the group consisting of methane and methanol.

Claims 30-35 (canceled)

Claim 36 (New) A method according to Claim 23 wherein said transformed host cell is a methanotrophic bacteria.